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Scott A McKinley* (scott.mckinley@ufl.edu), **David B Hill**, **John Mellnik** and **M. Gregory Forest**. *Fractional Kinetics of Microparticles in Human Mucus*.

Recent particle tracking data gathered by microrheologists reveals that anomalous diffusion is ubiquitous in the behavior of microparticles in biological fluids. The proper choice of a mathematical model depends on the character of the deviation from Brownian diffusion. This deviation is influenced by both properties of the particle and of the fluid: bead size and shape, surface chemistry, fluid microstructure, etc. In this talk we will see that, for a range of particle sizes and mucin concentrations, the observed data is consistent with fractional Brownian motion description that has a concentration-dependent coefficient and Hurst parameter. (Received August 28, 2012)